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Recommended Citation

Law Program, Environmental and Energy, "Environmental and Energy Law Perspectives: Fall 2012" (2012).
Environmental and Energy Law Perspectives. 9.
https://scholarship.law.gwu.edu/environmental_perspectives/9

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LAW

ENVIRONMENTAL AND ENERGY LAW

PERSPECTIVES

■ PERSPECTIVES

CLIMATE CHANGE ADAPTATION ON FEDERAL LANDS

By: Robert I. Glicksman, J.B. & Maurice C. Shapiro Professor of Environmental Law¹



Climate change presents serious challenges to the agencies that manage the federal public lands. Climate change has begun to shift the range of trees and other plants, alter the behavior (and sometimes threaten the survival) of animal species, and transform the manner in which entire ecosystems in the national parks, forests, wildlife refuges, and other public lands have long functioned. These changes require new management strategies that may be difficult to design and implement because of internal agency resistance to altering traditional ways of doing business. Even when the land management agencies are prepared to pursue new directions to face climate change challenges, the laws from which they derive their management authority may be ill-suited to addressing problems that differ from those

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■ VIEWPOINT

ALTERNATIVE CAREER PATHS:

GW ENVIRONMENTAL AND ENERGY LAW GRADUATES EXCEL IN WINNING PRESIDENTIAL MANAGEMENT FELLOWSHIPS

Over the past two years, seven GW JD and LLM students in the Environmental and Energy Law Program have been awarded Presidential Management Fellowships (PMF). The PMF is a two-year program run by the Office of Personnel Management that introduces students who have recently obtained a graduate degree to agencies across the federal government and prepares them to become government leaders. Brian Plunkett, JD '11 and PMF finalist explains, "I applied for a PMF

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Career Paths from page 1



Andy Byrne, JD '11



Jessica Katz, JD '11



Michael Saretsky, JD '10

position because I had a long-standing interest in government service and knew that it was a great first step for people looking for a career in government. It offers the benefits of formal training, rotational opportunities, and a better chance for quick advancement to positions of greater pay and responsibility.”

Law students may apply to the PMF in the fall of their last year and are competitively selected as PMF finalists based on their performance in an online assessment and in-person individual and group

Projects Administration—Energy (ARPA-E); Andy Byrne, JD '11, Environmental Protection Agency; Emily Hildreth, JD '11, Department of Commerce, Small Business Administration; Brian Plunkett, JD '11, ARPA-E; Ruchi Sadhir, LLM '11, Department of the Interior; Jay Calhoun, LLM '12, National Park Service; Jessica Katz, JD '11, Department of Housing and Urban Development; and Kathryn Ramsey, JD '12, Department of Energy.

From the time of his or her selection, a finalist has one year to accept a position with an agency. Many finalists find positions by attending a finalists-only job fair that takes place each spring in Washington, DC, or alternatively through the online finalists' job bank, or even by reaching out directly to the agency the finalist would like to work for to tailor their own position.

Rather than the “attorney–advisor” positions typically filled through honors programs, PMF positions are geared towards policy analysis and program administration. Working in policy allows law school graduates to bridge the gap between abstract legal requirements conceived by Congress and practical implementation of those requirements, and to guide their agency's overall mission on big-picture energy and environmental issues. Plunkett explains, “I took the job because of my strong interest in renewable energy technology development. I worked in the field before coming to law school and have always wanted to get back into it. I also prefer project development and working to create something over regulatory work. Finally, I liked the way the people I met in ARPA-E were dedicated to achieving the agency's mission and to constantly improving the efficiency and effectiveness

ENVIRONMENTAL AND ENERGY LAW PERSPECTIVES

Environmental and Energy Law Perspectives is published twice a year by the Environmental and Energy Law Program at The George Washington University Law School.

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...ON AVERAGE FEWER THAN TEN PERCENT OF APPLICANTS REACH THE FINALIST STAGE. GIVEN THESE ODDS, IT IS REMARKABLE THAT SO MANY GW ENVIRONMENTAL AND ENERGY LAW PROGRAM GRADUATES HAVE BEEN AWARDED FELLOWSHIPS.

presentation exercises. According to the PMF website, on average fewer than ten percent of applicants reach the finalist stage. Given these odds, it is remarkable that so many GW Environmental and Energy Law Program graduates have been awarded fellowships. Fellows include Michael Saretsky, JD '10, Department of Energy Advanced Research

of federal funding for alternative energy technology development.”

A fellow's term lasts for two years, during which time the fellow completes temporary rotational assignments and attends formal training with other fellows in addition to engaging in their primary work assignments, giving them a strong foundation from which to launch a career in public service. At the completion of the PMF experience, a fellow may transition into a permanent position with their agency, or may seek positions elsewhere including within the agency or with another federal agency.

Information about the PMF, including the application process, can be found at www.pmf.gov. ■

GW LAW RECEIVES \$450,000 GRANT FOR ENERGY PROGRAM DEVELOPMENT AND RESEARCH

THE CONSTELLATION FOUNDATION, A SUBSIDIARY OF EXELON CORPORATION, MADE THE DONATION.

The George Washington University Law School has received a \$450,000 donation from the Constellation Foundation to launch an energy law and policy initiative that will develop leaders on legal and policy issues in the electric energy field. The initiative debuted this fall.

Constellation, a subsidiary of Exelon Corporation, supplies homes and businesses with power, natural gas, and energy products and services in the United States.

"It is abundantly clear that America's economic future depends in large part on our developing and maintaining a sound energy policy," Dean Paul Schiff Berman of GW Law said. "With this generous contribution from the Constellation Foundation, GW is poised to become the national leader among law schools by becoming a trusted, nonpartisan source of innovative thinking in this ever-changing sector."

The \$450,000 donation will help the Law School expand its energy law and policy offerings and fund the hiring of a program advisor



Constellation SM
An Exelon Company

to launch the initiative, develop a research agenda, build an energy law advisory board, and convene stakeholder meetings.

The Law School already has a strong footing in energy law and policy, due in part to its location in the nation's capital. The GW Law curriculum has included energy law courses since the early 1980s. In 2009 the school founded the *Journal of Energy and Environmental Law*, published twice each year by GW Law students in collaboration with the Environmental Law Institute. In the same year the Law School launched a master's degree (LLM) concentration in Environmental and Energy Law. Recently,

the Law School added a new course in atomic energy law and plans a new oil and gas law course for the spring 2013 semester.

"The electricity industry is evolving rapidly, from the deployment of smart grid technology to the expansion of competitive markets serving a growing number of business and residential customers," said Mayo A. Shattuck III, chairman of the Constellation Foundation and executive chairman of Exelon Corp. "Many of the key policy matters that will frame this evolution will be developed and debated in the nation's capital, making George Washington University Law School an ideal partner." ■

PROFESSOR DINAH L. SHELTON RECEIVES 2012 BURHENNE AWARD



Professor Dinah L. Shelton

Professor Dinah L. Shelton has received the 2012 Burhenne Award for her "extraordinary contribution to environmental law, and in particular, for her work on the International Covenant on Environment and Development; on the link of human rights and the environment; and on indigenous peoples' rights." She was given the award at the International Union for Conservation of Nature (IUCN) World Conservation Congress, held from September 6–15 in Jeju, Korea.

The Burhenne Award was established by the Commission on Environmental Law during the First World Conservation Congress of the (IUCN) in 1996, to recognize outstanding work and dedication to the advancement of global environmental law. The award is named in honor of Dr. Wolfgang E. Burhenne, an active participant in the IUCN and co-founder of the International Council on Environmental Law.

Professor Shelton has a long history of engagement with international environmental and human rights law. She has taught international law at GW since she joined the law faculty in 2004. Before coming to the Law School, she was professor of international law and director of the doctorate program in international human rights law at the University of Notre Dame Law School. She has taught at a variety of other institutions, including Santa Clara University, UC Davis, Stanford University, UC Berkeley, the University of Paris, and the University of Strasbourg, France.

In addition to her academic career, Professor Shelton has held a variety of leadership and advisory positions with some of the key entities that develop international law and policy. She is currently serving a four-year term on the Inter-American Commission on Human Rights (IACHR). Prior to this appointment,

SECOND ANNUAL JAMIE GRODSKY PRIZE AWARDED

This past spring, GW Law was proud to award Lieutenant Commander Jonathan Dowling, JAGC, USN, (LLM '11), the 2012 Jamie Grodsky Prize for Environmental Law Scholarship.

Dowling's paper, "Improving Energy Security with the Great Green Fleet: The Case for Transitioning from Ethanol to Drop-In Renewable Fuels," highlights the U.S. Navy's planned Great Green Fleet, a strike group that will comprise nuclear powered carriers and submarines, hybrid electric ships powered by a 50/50 blend of algae-based naval propulsion fuel, and aircraft flying on a 50/50 blend of camelina-based naval aviation fuel. The fleet is a major emblem of the Navy's larger initiative to meet half its energy requirements through renewable sources by 2020. Dowling uses the Navy's example to urge the U.S. Congress to adopt a similar initiative, forgoing legislative preferences for ethanol-based fuels in favor of "drop-in" renewable fuels that meet the same performance capabilities of petroleum-based fuel. It concludes with recommendations for fostering a new renewable fuel policy that provides the United States with the greatest amount of energy security in a cost-effective and market-oriented manner.

Dowling graduated with highest honors from GW Law's Environmental and Energy Law LLM Program in 2011. He received a JD, concentrating in environmental law, from the University of Maryland School of Law in 2004, and a BS cum laude from Wake Forest University in 2001.



(L-R) Professor Robert Glicksman, Dr. Gerold Grodsky, LCDR Jonathan Dowling, LLM '11, and Dean Paul Schiff Berman.

The Jamie Grodsky Prize for Environmental Law Scholarship was funded by a generous gift from Jamie A. Grodsky's father, Dr. Gerold Grodsky, and memorial gifts from her friends. It was established to honor Professor Grodsky's legacy of leading-edge environmental scholarship by encouraging students to produce papers on important environmental issues. The prize is awarded each year at a ceremony held in connection with the J.B. and Maurice C. Shapiro Environmental Law Conference. An award of \$5,000 is given for the best paper written by a GW Law JD, LLM, or SJD student in the field of environmental law, based on originality, innovation, depth of scholarship, the importance of the

environmental issue addressed, and the quality of the writing and analysis. To receive the Grodsky Prize, a paper must be of publishable quality and make a significant contribution to the theory or practice of environmental law. The winning paper may be published in the *GW Journal of Energy and Environmental Law*.

The 2011 prize went to Renee Martin-Nagle, LLM '10, for her paper focusing on international groundwater law, "Fossil Aquifers: A Common Heritage of Mankind." Presenting the history and current challenges of regulating water resources across national boundaries, Ms. Martin-Nagle proposed a way to better manage international freshwater resources in the years to come. ■

ACADEMICS

CURRICULUM

This fall the Law School added a new course on atomic energy law, further strengthening its energy law offerings. In addition, the Environmental and Energy Law Program expects to add a course on oil and gas law during the spring semester. The fall 2013 Environmental Law Seminar is focusing on the rapidly expanding field of product regulation—more than 25 states now have laws dealing with take

back of consumer products such as computers, monitors, and televisions. Finally, this fall we launch our new Environment and Energy Policy Practicum. Students in the practicum will conduct in-depth, semester-long research projects on behalf of client organization. The practicum is another way GW is providing students with hands on legal experience while they are in law school. ■

WHAT'S NEW

LAW SCHOOL TO HOST WORKSHOP ON NEXT GENERATION COMPLIANCE



This winter, the Law School will be hosting a workshop on next generation compliance and how we can improve compliance with regulations through improved regulatory structures and advanced technology. The workshop will be co-sponsored by the U.S. EPA, Office of Environment and Compliance Assurance; the Environmental Law Institute (ELI); the UC Berkeley Center for Law, Energy, and the Environment; and the UC Berkeley Center for

Environmental Policy. It will be held at GW Law from December 11–12, 2012.

The purpose of the workshop is to identify novel ideas, best practices, and workable methods for improving compliance with environmental regulations while minimizing regulator implementation and monitoring costs. Topics include the potential use of market mechanisms or structural approaches that promote high compliance; effective use of

self-monitoring and reporting and third-party verification programs; tools to promote transparency, public accountability, informational availability, and disclosure; and new technologies and techniques in monitoring, electronic reporting, and use of web and mobile information devices.

Questions about the workshop may be directed to Jessica Wentz, jwentz@law.gwu.edu. ■

ENERGY & ENVIRONMENTAL LAW PAPER SERIES

The *GW Journal of Energy and Environmental Law* (JEEL) has launched a new online paper series that will showcase insightful articles written by GW Law students. While these articles do not go through the entire law review publishing process, they are typically articles referred to JEEL by faculty and are reviewed by JEEL editors prior to online publication. The new paper series is another way to bring high quality student work to a broader audience. The first two articles in the series are:

- “Offshore Wind Energy in Maryland—Renewable Portfolio Standard Set-Asides v. Feed-in Tariffs” by Anna Binau.
- “MISO & ERCOT Cost Allocation Methods for New Transmission: A Comparative Analysis” by Jacob Clark.

The Energy & Environment Paper Series can be found at <http://groups.law.gwu.edu/jeel/Pages/home.aspx>. ■

Burhenne Award from page 3

Professor Shelton served as a judge for the International Court of Environmental Arbitration and Conciliation, Chair of the IUCN Environmental Law Commission's Sub-committee on Human Rights and the Environment, and Rapporteur for the International Covenant on Environment and Development. She has also acted as a legal consultant to the United Nations Environment Programme (UNEP), the United Nations Institute for Training and

Research (UNITAR), the World Health Organization (WHO), the European Union, the Council of Europe, and the Organization of American States (OAS).

Professor Shelton has received several awards for her dedication to international human rights and environmental law, including the Elizabeth Haub Prize in Environmental Law and the Reinhold Niebuhr Award for Social Justice. She has also written and edited a wide range of books and articles on related subjects,

including three prize-winning books: *Protecting Human Rights in the Americas* (winner of the 1982 Inter-American Bar Association Book Prize and co-authored with Thomas Buergenthal); *Remedies in International Human Rights Law* (awarded the 2000 Certificate of Merit, American Society of International Law); and the three-volume *Encyclopedia of Genocide and Crimes against Humanity* (awarded a “Best Research” book award by the New York Public Library). ■

PROFILES



CHARLES BERARDESCO
JD '83

In July, after nearly a decade of working in various leadership positions at Constellation Energy, Charles Berardesco was appointed vice president, general counsel, and corporate secretary of the North American Electric Reliability Corporation (NERC). NERC is the nonprofit electric reliability organization that has been certified by the Federal Energy Regulatory Commission (FERC) to establish and enforce reliability standards for the bulk power system. NERC is responsible for overseeing eight regional reliability entities, which encompass all of the interconnected power systems of the contiguous United States and Canada. Berardesco will be involved in the standards setting process, and will be responsible for overseeing enforcement measures to ensure that bulk system owners, operators, and users comply with NERC's electric reliability standards.

Berardesco graduated from GW Law with high honors in 1983. He excelled academically and was managing editor of *The George Washington Law Review*. While in law school, he did not intend to become an energy lawyer. It was not until years later—when he began to work for Constellation Energy in 2003—that he developed an interest in energy law and policy. “Constellation was a major participant in power and gas markets, and was a leading advocate for competitive power markets throughout North America,” Berardesco explains, “thus, the debate surrounding the structure of these markets, and how structures affected our business model, were important discussions at Constellation.”

Berardesco worked at Constellation Energy from 2003 to 2012, during which time he assumed a number of different roles within the company, including senior vice president, general counsel, and chief compliance officer. He says his perspective on energy law evolved as he undertook new responsibilities at Constellation Energy, “first as a corporate lawyer, but then later as someone who was responsible for regulatory and compliance initiatives.” Irving B. Yoskowitz, the executive vice president of Constellation Energy when Berardesco was promoted to vice president in 2006, noted that Berardesco had “played a key leadership role in enhancing Constellation Energy’s focus on corporate governance and standards of business conduct, as part of our overall commitment to maintaining integrity in our business.” (Constellation Energy Press Release, 2006)

“GIVEN GW LAW’S LOCATION AND PRESTIGE, I BELIEVE THE SCHOOL IS UNIQUELY POSITIONED TO ENHANCE THE DIALOGUE IN A WAY THAT CAN POSITIVELY AFFECT THE DEVELOPMENT OF POLICY AND LAW IN THIS AREA.”

While working at Constellation Energy, Berardesco also played an instrumental role in facilitating a \$450,000 grant from the Constellation Energy Foundation to GW Law for the purpose of developing an Energy Law and Policy Initiative (see article on the Initiative in this issue). He introduced Mayo Shattuck, the former CEO of Constellation Energy and current executive chairman of Exelon, to GW Law and its programs. He also worked with Dean Berman to engage Constellation in the creation of the Energy Law and Policy Initiative.

When asked about his hopes for the Energy and Policy Initiative, Berardesco explained:

“First and foremost, I hope the Initiative will create a place for an enhanced dialogue among lawyers and policy makers with respect to

key issues in the energy industry. This dialogue has to be based on real facts, solid analysis, and innovative thinking. Given GW Law’s location and prestige, I believe the school is uniquely positioned to enhance the dialogue in a way that can positively affect the development of policy and law in this area. I also hope that this initiative will engage alums—we have an amazing number of GW alums in the energy bar, many of whom are leaders in the field, and having them engaged in this initiative will be positive for our industry as well as the school. Finally, I hope we will engage students—this is a fascinating field of law, and we need to attract the best and brightest to the field to help address the important issues that are at play.”

On April 23, 2012, NERC announced that Berardesco would be joining the organization as its new general counsel, effective July 2. NERC president and CEO, Gerry Cauley, noted that Berardesco “brings his outstanding legal and corporate background, especially in compliance and regulatory activities, to NERC,” and that Berardesco’s “knowledge and expertise will help further develop the legal strategies and policies of the electric reliability organization.” (NERC Press Release, April 23, 2012) Just nine weeks into the job, Berardesco already has a range of objectives to pursue at NERC. He noted that some of the topics he would like to focus on include improving the reliability standards development process, modifying NERC’s approach to compliance enforcement, building stakeholder awareness of NERC’s efforts to enhance system reliability, and enhancing the skill level and engagement of the legal and compliance enforcement staff.

In addition to his leadership in energy law and policy and his engagement with GW Law, Berardesco actively participates in a number of community and charitable organizations, and is a member of the Business Council of the Human Rights Campaign. He has been named a “Leader in the Law” by the *Maryland Daily Record*, and one of the top ten “General Counsels to Watch” by *Corporate Board Magazine*. He also received the Out and Proud Corporate Counsel award by the National LGBT Bar Association in 2010.



JOSHUA STURTEVANT JD '11

Joshua Sturtevant recently joined a solar development company, Distributed Sun or “D-Sun,” which develops, finances, constructs, owns, and operates commercial-scale solar energy systems throughout the United States. As the company’s legal fellow, Sturtevant will be working on a range of issues such as due diligence, contract formation, and business development strategies.

Sturtevant says that he happily “stumbled into” the field of solar development while in law school, and has developed a strong passion for it since. Before attending GW Law, Sturtevant studied economics at the University of Massachusetts, and worked for several years as a capital markets analyst focused on the publicly traded real estate sector. Sturtevant discovered his interest in energy law and solar development while taking the Law School’s course on environmental and energy law with Professor Debra

Jacobson. He found that he was very interested in the subject matter and that it correlated with his past work. Professor Jacobson was likewise interested in Sturtevant’s background in capital markets and real estate.

As a result, Sturtevant became involved with the GW Solar Institute, and, under the mentorship of Professor Jacobson and Ken Zweibel (director of the Institute), he began researching the potential use of various tax structures to incentivize solar development. His research culminated in a paper he prepared for his upper-level writing requirement, “The S-REIT: An Investment-Driven Solution to Solar Development Problem,” which was presented by the Solar Institute at its annual symposium in 2010.

Sturtevant’s main finding in his paper was that it would indeed be possible to make minor clarifications to existing tax rules in a way that would promote solar development. He explained, “[j]ust as real estate investment trusts (REITs) have spurred investment into commercial real estate, solar real estate investment trusts (S-REITs) could bring solar development to the masses and would increase capital flows into solar energy markets.” For those unfamiliar with the concept, a real estate investment trust is a tax designation for a corporate entity that invests in real estate, which reduces or eliminates the corporate tax burden. Thus, this tool could be used to reduce the tax burden for solar investors.

In order to implement his proposed strategy for solar REITs, Sturtevant recommended that the existing tax code be clarified, so as to provide “confirmation that proceeds from power purchase agreements qualify as revenue as defined by §856 of the Internal Revenue Code.” In addition, Sturtevant notes that developing an effective solar REIT program will require “restructuring of some of the current financial incentives for large-scale solar projects.”

Sturtevant says that his work on this paper paved the way for his position at Distributed Sun. He had the opportunity to promote and circulate his paper at a symposium sponsored by the Earthshot Foundation, a nonprofit organization focused on bringing together panels of experts on solar development and encouraging the formation of public-private partnerships. Executives at Distributed Sun noted Sturtevant’s research during the symposium and approached him about working for their company.

With respect to other law students who are interested in energy law careers, Sturtevant recognizes that this is a tough job market, and encourages students to develop relationships and take advantage of all the resources that GW Law has to offer. Specifically, Sturtevant notes that his GW mentors played a significant role in his success, and recommends that students reach out to the Law School’s faculty and staff who share common interests. Sturtevant also encourages students to identify subjects about which they are truly excited, because having passion and enthusiasm for specialized areas of the law tends to open up networking opportunities.



JESSICA WENTZ LLM '14 ENVIRONMENTAL LAW FELLOW

Jessica Wentz joined the GW Law faculty this fall as a visiting associate professor and environmental program fellow. During the next two years, she will be teaching and conducting research while she expands her knowledge of environmental law by pursuing an LLM degree part time.

Wentz grew up in a rural part of Northern California, where she developed an early appreciation for ecosystems and wildlife. Concerned about both the environmental and humanitarian impacts of unsustainable development patterns, Wentz pursued an undergraduate degree in international development at the University of California, Los Angeles. While there, she studied patterns of globalization, resource exploitation, and environmental degradation from the perspective of developing countries, and attempted

“[J]UST AS REAL ESTATE INVESTMENT TRUSTS (REITS) HAVE SPURRED INVESTMENT INTO COMMERCIAL REAL ESTATE, SOLAR REAL ESTATE INVESTMENT TRUSTS (S-REITS) COULD BRING SOLAR DEVELOPMENT TO THE MASSES AND WOULD INCREASE CAPITAL FLOWS INTO SOLAR ENERGY MARKETS.”

NEW ENVIRONMENTAL AND ENERGY POLICY PRACTICUM



Fall 2012 practicum students with Assistant Dean Robin Juni (center), one of the co-teachers of the course.

GW Law has recently launched a new program, the Environmental and Energy Policy Practicum, which allows students to conduct in-depth law and policy development work on behalf of environmental or energy nonprofit organizations and governmental agencies. Students enrolled in the practicum undertake semester-long projects that typically culminate in a substantial written product, such as a policy

This semester, students in the practicum are engaged in a wide variety of projects with both domestic and international organizations. Two students, Luis Bernal-Jimenez, LLM '13, and Yaron Cohen, LLM '13, will be developing legal curricula for the United Nations Institute for Training and Research on the issues of sustainable energy and human rights and environmental law. Jessica Kabaz-Gomez, JD '13, will be working with TRAFFIC, the organization responsible for enforcing the Convention on International Trade of Endangered Species (CITES), to develop a prosecution handbook for violations of CITES provisions.

In addition, several students will be working on projects related to renewable energy and solar power development in Virginia. Jacob Clark, JD '13, will be researching how real estate appraisers in Virginia can receive the appropriate training and certification required so that they can assign value to homes for renewable energy and energy efficiency features. John Perkins, LLM '13, will be addressing the legal hurdles and options for municipalities that are interested in providing renewable energy to their citizens by forming municipal electric power utilities. Shannon Huecker, JD '13, will be analyzing the legal implications and framework for power purchase agreements (PPA) in order to identify how Virginia could implement PPA legislation that would facilitate the production and sale of renewable energy in the state. ■

memoranda or draft legislation. Students also have the opportunity to engage one another during meetings held throughout the semester, and to present their research to their peers. Environmental Program faculty members work with students to identify projects that cater to their interests, and provide supervision and guidance to complement student interactions with their host organizations.

TWO STUDENTS WILL BE DEVELOPING LEGAL CURRICULA FOR THE UNITED NATIONS INSTITUTE FOR TRAINING AND RESEARCH ON THE ISSUES OF SUSTAINABLE ENERGY AND HUMAN RIGHTS AND ENVIRONMENTAL LAW.

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to identify economically feasible sustainable development strategies. She wrote her undergraduate thesis on the potential benefits of community-driven development (CDD), using case studies from successful CDD projects in East Africa.

After graduating, Wentz worked with a small international NGO, Global Partners for Development, where she compiled information on and assessed the effectiveness of CDD projects that had been supported by the organization and implemented by local communities. She analyzed a range of projects (clean water, classroom construction, micro-finance, public health) and found that the long-term success of these projects was largely dependent on the existence of regulatory support and infrastructure; the best efforts of communities could not overcome ineffective governance at the regional and state level.

Realizing the incredibly important role that law and policy play in shaping development pathways, Wentz decided to obtain a law degree from Columbia University. While there, she studied environmental law, participated in clinical programs, and conducted independent research on issues related to climate change and energy policy. Her work covered a broad range of issues including the atmospheric impact of livestock production systems, geothermal energy development, and alternative modes of international climate governance.

Wentz has enjoyed working on both policy issues and litigation. During her first summer at Columbia, she interned at the Center for Climate Change Law, where she analyzed proposals for cap and trade legislation, compiled information on municipal green building incentives, and researched strategies for island nations threatened by sea level rise. Eager to explore the world of litigation, she spent her second summer clerking at the Earthjustice regional office in California, where she worked on a broad range of cases being brought under the Endangered Species Act (ESA), the National Environmental Policy Act (NEPA), and other state and federal statutes.

Wentz sees her fellowship as an opportunity to continue learning while also conducting scholarly research and assisting students who are interested in pursuing environmental law careers. She is particularly excited to work with students in the Law School's new Environment and Energy Practicum. ■

IN PRINT



RICHARD J. PIERCE, JR.

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"A Primer on Demand Response and a Critique of FERC Order 745," 3 *George Washington Journal of Energy and Environmental Law* 102 (2012).

"The Past, Present, and Future of Energy Regulation," 31 *Utah Environmental Law Review* 291 (2011).

"Legal Disputes Related to Climate Change Will Continue for A Century," forthcoming in *Environmental Law*.



ROBERT L. GLICKSMAN

"Solar Energy Development on the Federal Public Lands: Environmental Trade-Offs on the Road to a Lower Carbon Future," 3 *San Diego Journal Energy & Climate Law* 107 (2011–2012).

"Climate Change and the Puget Sound: Building the Legal Framework for

Adaptation," 2 *Climate Law* 299 (2011) (with multiple coauthors).

"Governance of Public Lands, Public Agencies, and Natural Resources," in *The Law of Adaptation to Climate Change: U.S. and International Aspects* (Gerrard & Kuh, eds.), ABA (2012).

"The Justifications for Nondegradation Programs in U.S. Environmental Law," in *Le Principe de Non-Regrression en Droit de l'Environnement* (Priour & Sozzo, eds.), Bruylant (2012).

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Summer 2012 updates to R. Glicksman et al., *Environmental Protection: Law and Policy*, Aspen Publishing (2011).



LEROY C. (LEE) PADDOCK

"Beyond Deterrence: Enforcement and Compliance in the Context of Sustainable Development," 42 *Environmental News & Analysis* 10622 (July 2012)

"The Role of Public Engagement in Achieving Environmental Justice," in *Poverty Alleviation and Environmental Law* (Bouthillier, Cohen, Marquez, Mumma & Smith, eds.), Edward Elgar Press (2012).

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DINAH L. SHELTON

"Challenging History: The Role of International Law in the U.S. Legal System," 40 *Denver Journal of International Law and Policy* 1-20 (2012).

"International Law in Domestic Systems," in *General Reports of the XVIIIth Congress of the international Academy of Comparative Law: Rapports Generaux du XVIIIeme Congres de l'Academie Internationale de Droit Compare*. (Brown & Snyder, eds.), London: Springer (2012).

"Resolving Conflicts Between Human Rights and Environmental Protection," in *Hierarchy in International Law: The Place of Human Rights*. Oxford: Oxford University Press (2012).

Human Rights and the Environment, Cheltenham, UK: Edward Elgar Publishing, (2011) (with Joseph L. Sax). ■

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Congress envisioned when it adopted those laws and that undermine some of the key assumptions underpinning those laws.

CHANGING AGENCY CULTURE

A recent survey of federal land management agency employees highlights the institutional challenges of bolstering the capacity of federal lands and resources to withstand and adapt to climate change. The survey inquired about reasons for the dearth of actions geared toward making federal lands and resources more resilient to climate change. Respondents cited as one group of reasons the absence of a climate change adaptation mandate at the national level, the vagueness of national, regional, or unit-specific policy mandates, or a perception that they were not obliged to begin planning or implementing adaptation measures.

The survey respondents identified inertia, resistance to change, and a culture of handling resource problems in traditional ways within the agencies as another set of obstacles to an emphasis on taking adaptive actions. Continuing to view the national wildlife refuges as conservation fortresses, for example, may no longer be a viable strategy for protecting wildlife. Recent initiatives by President Obama's Climate Change Interagency Task Force and by the land management agencies will facilitate learning about and implementing new approaches to resource management that have been crafted with the unique challenges posed by climate change in mind. How quickly these approaches make inroads into traditional resource management approaches at the unit level remains to be seen.

The survey respondents also addressed the possibility that some federal laws will impair agencies' climate change adaptation efforts because they were adopted before climate change was a recognized

phenomenon and may not be well suited to addressing it. Most respondents viewed the National Environmental Policy Act as an "enabler," whose procedural thrust is likely to facilitate incorporation of adaptation considerations into agency planning. They were less optimistic about the ability of the Endangered Species Act (ESA) to contribute to adaptation efforts, tending to view its focus on individual species as an obstacle to the ecosystem-wide approach that effective adaptation will require. The respondents also expressed concern that the emphasis on preservation of "natural" conditions reflected in the National Park Service (NPS) Organic Act and the Wilderness Act might hinder adaptation efforts by making intervention and manipulation to achieve adaptation goals problematic. Some respondents regarded the organic legislation for the national forests as more amenable to increased emphasis on adaptation in light of its long-range planning mandates, while others characterized the difficulty of revising forest plans to reflect new information as a barrier to Forest Service efforts to accommodate adaptation. The Forest Service's April 2012 planning regulations reflect the agency's efforts to overcome this barrier. The Service identified eight major goals of the planning process, and two of them relate to climate change: restoring natural resources to make the national forests more resilient to climate change, protect water resources, and improve forest health; and contributing to ecological, social, and economic sustainability by ensuring that all plans will be responsive and can adapt to issues such as the challenges of climate change. In any event, the survey responses raise the possibility that existing legislation will make it easier for some but harder for other land management agencies to build climate change adaptation considerations into day-to-day decision-making processes.



REDUCING CO-STRESSORS TO PROMOTE EFFECTIVE ADAPTATION

A logical strategy for making public natural resources more resilient to climate change is to reduce stressors that make ecosystems or particular resources vulnerable to the adverse effects of climate change. Agencies that seek to remove existing stressors will be dealing with problems with which they are familiar, reducing the risk of intransigence to new approaches. Actions to address these problems often can be justified on their own terms (such as protecting water quality for aquatic fish and wildlife). The agencies' organic statutes are likely to most clearly and directly apply to traditional problems that create existing ecosystem stresses, minimizing legal uncertainty about the scope of the agencies' power to address them. Some of the land management agencies have already sought to increase resilience by attacking co-stressors. The NPS, for example, has



removed two dams in an estuary in Point Reyes National Seashore in California to enhance survival rates for endangered fish and removed canals and levees in Everglades National Park to restore natural freshwater flows and block saltwater intrusion.

RELOCATION AND ASSISTED MIGRATION

Reduction of co-stressors will not suffice as a mechanism for addressing all climate change problems, however. More innovative strategies such as relocation and assisted migration may be needed to address the inability of plant and animal species to survive in their traditional habitats. Climate change may alter the functioning of the national wildlife refuges, for example, so that northerly units assume the functions previously observed in more southerly units. Some of the land management agencies have begun addressing these kinds of challenges. NPS biologists at Hawaii Volcanoes and Haleakala National Parks, for example, are in the process of collecting and dispersing seeds and cuttings of 50 rare species of flowering plants to new locations in an effort to reduce extinction risk. Similarly, the Bureau of Land Management, under a project called Seeds of Success, has begun collecting seeds that may be replanted if climate change makes it impossible for plant species to survive in their current locations.

The adequacy of existing legislation to address these more novel strategies is likely to be more contentious than whether the legislation authorizes actions to address co-stressors. One important question is whether existing legislation permits agencies to implement relocation or assisted migration projects. The ESA authorizes the Fish and Wildlife Service to introduce experimental populations of endangered or threatened species in new locations, and the broad discretionary authority delegated to the other land management agencies may enable them to take similar actions for species not yet listed under the ESA. The National Forest Management Act's requirement that the Forest Service "provide for diversity of plant and animal communities" to meet multiple-use objectives appears to be one such provision.² The NPS Organic Act's broadly worded discretionary directive to "promote and regulate" the use of the national parks and monuments "by such means and measures as conform to the[ir] fundamental



purpose," including conserving wildlife, may be another.³

Relocation and assisted migration efforts will face both practical and legal difficulties, however. Indeed, these problems illustrate the challenges the land management agencies are likely to confront as they move beyond reduction of co-stressors in seeking to minimize the adverse effects of climate change through other techniques. It is likely that lands suitable for alternative habitat for plants and animals adversely affected by climate change will not exist within the same land management system in which the affected species are currently found, or even within any of the existing land management systems. More broadly, the location and scope of climate change problems will rarely align with the jurisdictional boundaries staked out in the statutes vesting the agencies with their authority to address climate change.

If appropriate substitute habitat for a species in trouble exists within other land management systems, the agencies managing the traditional and desired new habitats will have to coordinate their actions. The need for coordination, not only among the federal land management agencies, but also between those agencies and state governments or private landowners, is an inescapable component of successful adaptation strategies. The agencies will have to guard against resistance to working in concert that may arise from the fear of ceding jurisdictional turf or distrust of the capacities or commitments of fellow agencies.

Bodies such as the Council on Environmental Quality or the Climate

Change Interagency Task Force may be able to minimize these difficulties. The Task Force established as an overarching policy goal the coordination of the federal government's capabilities to support adaptation.⁴ It concluded that effective reduction of the impacts of climate change on fish, wildlife, and plant resources and habitats "requires collaboration among the federal government, states, tribes, non-governmental organizations, private industry, and private landowners. . . ."⁵

If none of the federal lands systems contains suitable alternative habitat, the land management agencies may need to consider acquiring property that contains suitable habitat through land exchanges or purchases. Acquisitions to enlarge the borders of national parks, forests, or wildlife refuges can protect species while they seek out new ranges. Existing laws authorize agencies to engage in exchanges or to acquire additional lands.⁶ That authority is constrained, however, so that new legislation authorizing particular acquisitions may be necessary. In some instances, acquisition of conservation easements or other less than fee interests may suffice.

SIGNIFICANT CHALLENGES AND NEW DIRECTIONS

The historic functioning of the lands owned and managed by the federal government for preservation, recreational, historic, scientific, and economic uses will be disrupted by climate change, in some cases dramatically. The agencies face significant challenges in

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their efforts to make public natural resources resilient to climate change so that the flow of ecosystem services they provide is not disrupted. Some of these challenges result from scientific uncertainty about the timing, location, and scope of climate change, hindering informed planning. Similarly, the unprecedented nature of some of the anticipated changes deprives land managers of historical analogs to guide future adaptation efforts. Still other challenges are institutional in nature, as agencies resist changes in traditional management techniques or confront the need to coordinate management actions with other agencies and stakeholders that

have not always been close allies or that have divergent interests. Finally, the land management agencies face important legal obstacles to effective climate change adaptation. In the absence of an overarching federal adaptation statute, the agencies must continue to rely on existing laws adopted before climate change threats had clearly emerged.

Despite these challenges, the land management agencies have embarked upon a concerted, if uneven effort to bolster the federal government's capacity to prepare for and respond to climate change as it affects federal lands and the natural and cultural resources they contain. Some agencies, such as the Fish and Wildlife Service, appear

to have established a more comprehensive framework for adaptation than others. As the agencies continue to strive to make the lands and resources they control more resilient to climate change, it is important that they share their knowledge and coordinate their efforts. No amount of planning and preparation can avoid the disruptions that climate change will cause. With leadership, commitment, and adequate resources, however, the agencies can create a legal and policy infrastructure that minimizes the risk that federal lands and resources will no longer be able to provide the rich array of benefits to which the nation has become accustomed. ■

¹ This article is based on the author's chapter in a book published by the American Bar Association, "Governance of Public Lands, Public Agencies, and Natural Resources," in *The Law of Adaptation to Climate Change: U.S. and International Aspects* (Michael B. Gerrard & Katrina F. Kuh, eds., 2012).

² 16 U.S.C. § 1604(g)(3)(B).

³ 16 U.S.C. § 1.

⁴ *The White House Council on Environmental Quality, Progress Report of the Interagency Climate Change Task Force: Recommended Actions in Support of a National Climate Change Adaptation Strategy* 75 (Oct. 5, 2010).

⁵ *Id.* at 43.

⁶ 2 George Cameron Coggins & Robert L. Glicksman, *Public Natural Resources Law* §§ 13:24 to 13:50 (2d ed. 2007).